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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/666,194	09/21/2000	Jeffrey A. Korn	1008-0100	9104
25263	7590	04/19/2004	EXAMINER	
J GRANT HOUSTON AXSUN TECHNOLOGIES INC 1 FORTUNE DRIVE BILLERICA, MA 01821			PETKOVSEK, DANIEL J	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/666,194

Applicant(s)

KORN, JEFFREY A.

Examiner

Daniel J Petkovsek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment received January 9, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 and 21-25 is/are allowed.
- 6) ☒ Claim(s) 12, 15-19, 27-35, 37, 38 and 41-47 is/are rejected.
- 7) ☒ Claim(s) 13, 14, 20, 36, 39 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on May 3, 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

This office action is in response to the amendment received January 9, 2004. In accordance with the amendment, claims 15, 29, and 42 have been amended. The drawings received on May 3, 2001 are acknowledged. Claims 1-25, and 27-47 are currently pending, as claim 26 has been canceled.

Claim Objections

1. Claims 9 and 29 are objected to because of the following informalities: in the amended version (received January 9, 2004), two informalities exist. Regarding claim 9, and extra "image" and a period are at the end of the claim. Regarding claim 29, the title should read "(currently amended)", not "(currently *added*)". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 12, 15-18, 37, 38, and 41-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Korevaar U.S.P. No. 6,498,668.

Korevaar U.S.P. No. 6,498,668 teaches (ABS, Fig. 6, column 6, lines 42-65) an optical alignment apparatus and process for a fiber optic system having at least one lens (56,60) and a tunable filter 58 in which a back-reflection from any optical train element is detected by a camera 72, and the positions are the lenses, filter, etc. are manipulated in response to the back

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reflection (see column 7, lines 38-45). Regarding the filter 58 being tunable, moving/adjusting a filter and moving lenses around a filter (see column 7, lines 38-45) creates tuning of a filter, allowing different signals to be passed through the filter and adjustments can be made (via the filter and/or lenses) to improve optical coupling performance. Regarding claims 18 and 43, the signal is tuned by adjuster 82.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19, and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korevaar U.S.P. No. 6,498,668.

Korevaar U.S.P. No. 6,498,668 teaches (ABS, Fig. 6, column 6, lines 42-65) an optical alignment apparatus and process for a fiber optic system having at least one lens (56,60) and a tunable filter 58 in which a back-reflection from any optical train element is detected by a camera 72, and the positions of the lenses, filter, etc. are manipulated in response to the back reflection (see column 7, lines 38-45). Korevaar '668 does not explicitly teach some of the dependent limitations as claimed.

Regarding claim 19, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use fiber pigtails optically coupled to the alignment system of Korevaar '668, since coupling to these devices improves upon optical performance once the apparatus is properly aligned. Regarding claim 34, filters are well known in the art to

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be wavelength selective in certain ranges, and using a coating for the filter is well known in the art to create predetermined wavelength ranges. Regarding claims 27-33 and 35, although not explicitly disclosed as MEMS tunable filtering devices, it would have been obvious to use MEMS devices for improved filtering purposes of the incoming optical signal. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use MEMS device to decrease size and improve optical filtering performance.

Allowable Subject Matter

6. Claims 1-11 and 21-25 are allowed. The relevant prior art does not teach or reasonably suggest that the optical alignment detects a back-reflection from the lens and/or tunable filter element (claims 1-11). The prior art detects a back-reflection from the image of the fiber 62. The relevant prior art of record does not teach or reasonably suggest that an image is generated from both lenses, and each image created causes an adjustment of each respective lens to improve optical alignment (claims 21-25).

7. Claims 13, 14, 20, 36, 39, and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The relevant prior art does not teach or reasonably suggest these specific limitations of the claimed subject matter. Regarding claims 20 and 36, the detection of a ratio is not disclosed or reasonably suggested. Regarding claims 13 and 40, frequency not coinciding with a resonant peak is not disclosed or reasonably suggested. Regarding claims 14 and 39, a reflective member insertable is not disclosed or reasonably suggested.

Response to Arguments

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8. Applicant's arguments filed January 9, 2004 have been fully considered but they are not persuasive. Applicant traverses the rejection to Korevaar U.S.P. No. 6,498,668 by stating that the filter element 58 is not tunable. This argument is not persuasive, since the parts of the optical assembly can be moved/adjusted to improve alignment. In fact, moving/adjusting a filter and moving lenses around a filter creates tuning of a filter, since different signals can be passed through the filter and adjustments can be made to improve optical coupling performance. Rejections to claims 12, 15-19, 27-35, 37, 38, and 41-47 have been fully addressed above.

9. Applicant traverses the rejections to claim 1 by stating that, "detecting a back-reflection from the lens and/or the tunable filter element" is not disclosed by Korevaar '668. This argument is persuasive, and the rejections to Korevaar '668 to claims 1-11 have been withdrawn.

10. Independent claims 12, 15, 16, 27, and 37 stand rejected to Korevaar '668, since no specific arguments were made to their merits besides the tunable filter argument. Also, the limitation of claim 1, "detecting a back-reflection from the lens and/or the tunable filter element", is not claimed as such in these other independent claims.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

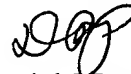
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel J Petkovsek
Examiner
Art Unit 2874

April 2, 2004



Brian Healy
Primary Examiner